



Vermont State Airport System Plan | Vermont Aviation Advisory Council

March 11, 2019



Developed By
McFarland Johnson

Forecasts of Aviation **Demand**



■ Airport Performance Metrics

- Population; Based Aircraft; Fuel Sales (100LL and Jet A)

■ Vermont State Performance vs. National Trends

- Fuel Sales; Based Aircraft; Hours Flown Benchmark

■ High Growth

- Franklin County (FSO), Northeast Kingdom Int'l (EFK), Burlington Int'l (BTV), Morrisville-Stowe (MVL), and Middlebury (6B0)

■ Baseline Growth

- Hartness (VSF), Shelburne (VT8), John Boylan (5B1), Post Mills (2B9), Deerfield Valley (4V8)

■ Lower Growth

- Caledonia (CDA), Rutland (RUT), William H. Morse (DDH), Basin Harbor (B06), Warren-Sugarbush (0B7)

■ Historic Trends

- (-1.33%) - 12 year Trend (2005: 581 -> 2017: 448)
- (-1.7%) - Nationwide 2010-2016 Piston (Single/Multi)

■ Future Projections

- (-0.8%) Average Annual Growth in Piston
- 1.9% Average Annual Growth in Turbine/Jet

■ Notable Disproportionate Aircraft Type Breakdown

- 33/501 (6.5%) are Jet or Multi, Remainder Single/Glider/Ultralight

Fuel Sales Trends (Operations)



■ Jet-A

- 1.43% Statewide 2013-2016 (GA VTrans Airports Only)
- -3.9% Statewide 2006-2016
- Top Performers: FSO, EFK, MVL
- Greatest Declines: DDH, VSF, BTV (Airline Related)

■ Avgas

- 0.64% Statewide 2013-2016 (GA VTrans Airports Only)
- -3.24% Statewide 2006-2016
- Top Performers: VSF, MVL, EFK, BTV, MPV, FSO
- Greatest Declines: CDA, RUT

VT vs. FAA National Forecast



Historic	Vermont	FAA Aerospace
100LL	0.025%	-1.00%
Jet A	-0.01%	0.40%
Based AC	-1.33%	-1.70%

(pistons)

Projected	Vermont	FAA Aerospace
100LL	0.038%	-0.40%
Jet A	0.048%	1.90%
Based AC	-0.626%	-0.80%

(pistons)

VT Aircraft Mix
Consistent with VT
Performance vs.
National Trends
(Higher Piston/100LL

■ FAA Aerospace Forecast

- Hours Flown: Piston -0.60%, Turbine 2.4%
- GA Aircraft: Piston -0.80%; Turbine 1.9%

Industry Trends
Favor Jet and
Turbine Growth

Proposed VASP Growth Rates



Operations

Base	0.42
High	0.84
Low	0.21

Flying Clubs and Fractional Ownership in GA Aircraft Will Allow Operations to Increase While Based Aircraft Decrease

Based Aircraft

Base	-1.61%
High	1.20%
Low	-2.39%

Decline Represents Retirement or Elimination of Older, Typically Less-Active Aircraft

Forecast Summary



Forecast Period	Historical			20-Year			
Airport	2004	2017	CAGR	TAF	Low	Average	High
Basin Harbor	-	-	-	N/A	2,211	2,305	2,506
Burlington International	95,106	67,110	-2.25%	73,743	79,307	82,697	89,897
Caledonia County	2,050	7,380	12.35%	7,380	7,696	8,025	8,724
Deerfield Valley Regional	-	-	-	N/A	3,233	3,376	3,665
Edward F. Knapp	32,000	24,125	-2.54%	24,125	25,159	26,234	28,518
Franklin County	21,400	10,095	-6.60%	10,095	10,528	10,978	11,933
Hartness State	9,300	6,611	-3.05%	6,611	6,894	7,189	7,815
John H. Boylan	-	-	-	N/A	425	448	497
Middlebury State	35,250	10,900	-10.12%	10,900	11,367	11,853	12,885
Morrisville-Stowe	18,020	11,976	-3.65%	6,358	6,658	6,972	7,643
Northeast Kingdom International	7,140	9,452	2.58%	9,452	9,552	9,652	9,856
Post Mills	9,510	4,330	-6.90%	4,330	4,516	4,709	5,119
Rutland – S. VT Regional	29,376	31,770	0.71%	13,901	12,881	13,432	14,601
Shelburne	-	-	-	N/A	4,418	4,326	4,418
Warren-Sugarbush	22,500	17,620	-2.20%	17,620	18,375	19,161	20,829
William H. Morse	26,250	14,377	-5.33%	14,377	14,863	15,498	16,847
State Total	307,902	215,746	-2.90%	198,892	218,083	226,855	245,753

Future System *Performance*



System Performance Analysis

Minimum Facility & Service Objectives Performance

System Goals

Identifies Facility Targets
within each VTSASP Category that Align with System Goals
and Highlights Deficits



Geographic Service/Coverage Area Performance

Performance "Reach"

Identifies Land Area, Population, and Economic Centers Served
and Highlights Towns/Regions, People, and Businesses of State
that May be Underserved

System-Wide Airside & Landside Priorities



Airside

Runways
Taxiways
Lighting
NAVAIDS
Approaches



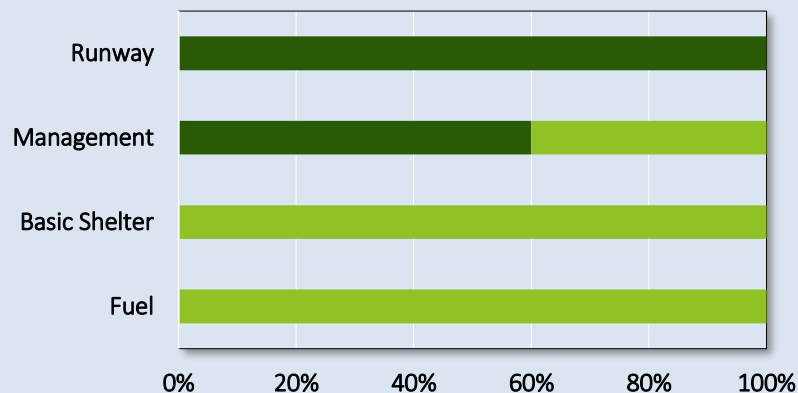
Landside

Terminal(s)
Management/Staffing
Aeronautical
Businesses/Services

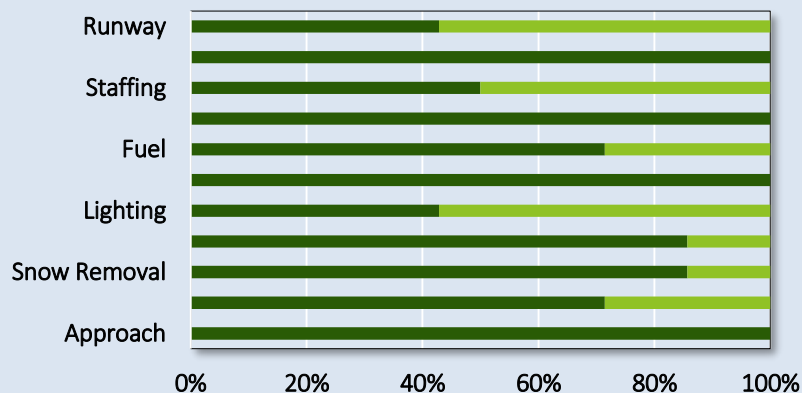
Current Performance - Minimums



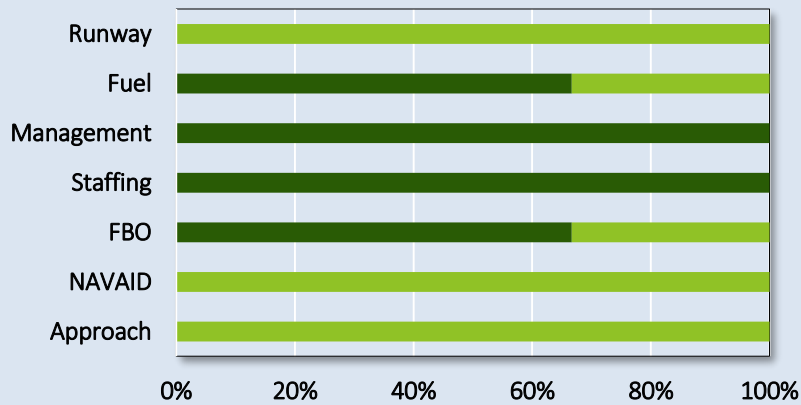
Category 1 Performance



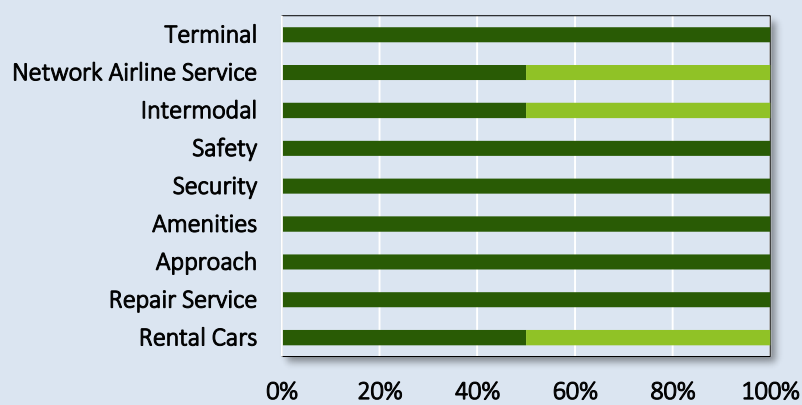
Category 3 Performance



Category 2 Performance

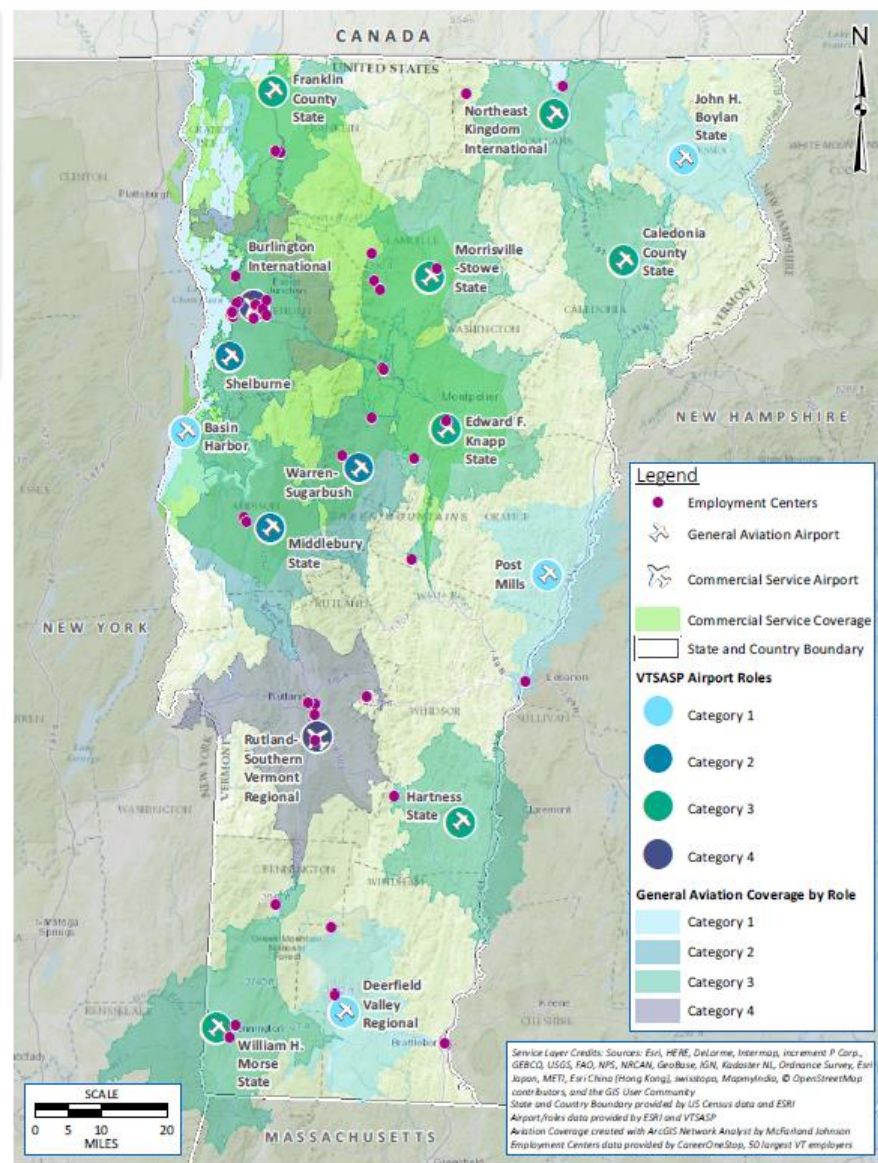
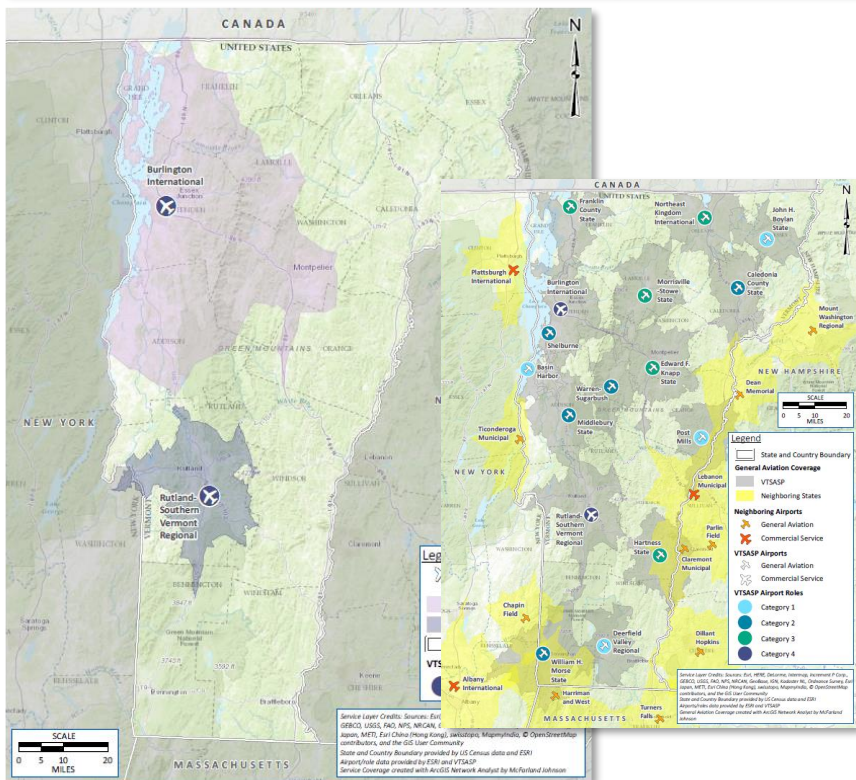


Category 4 Performance

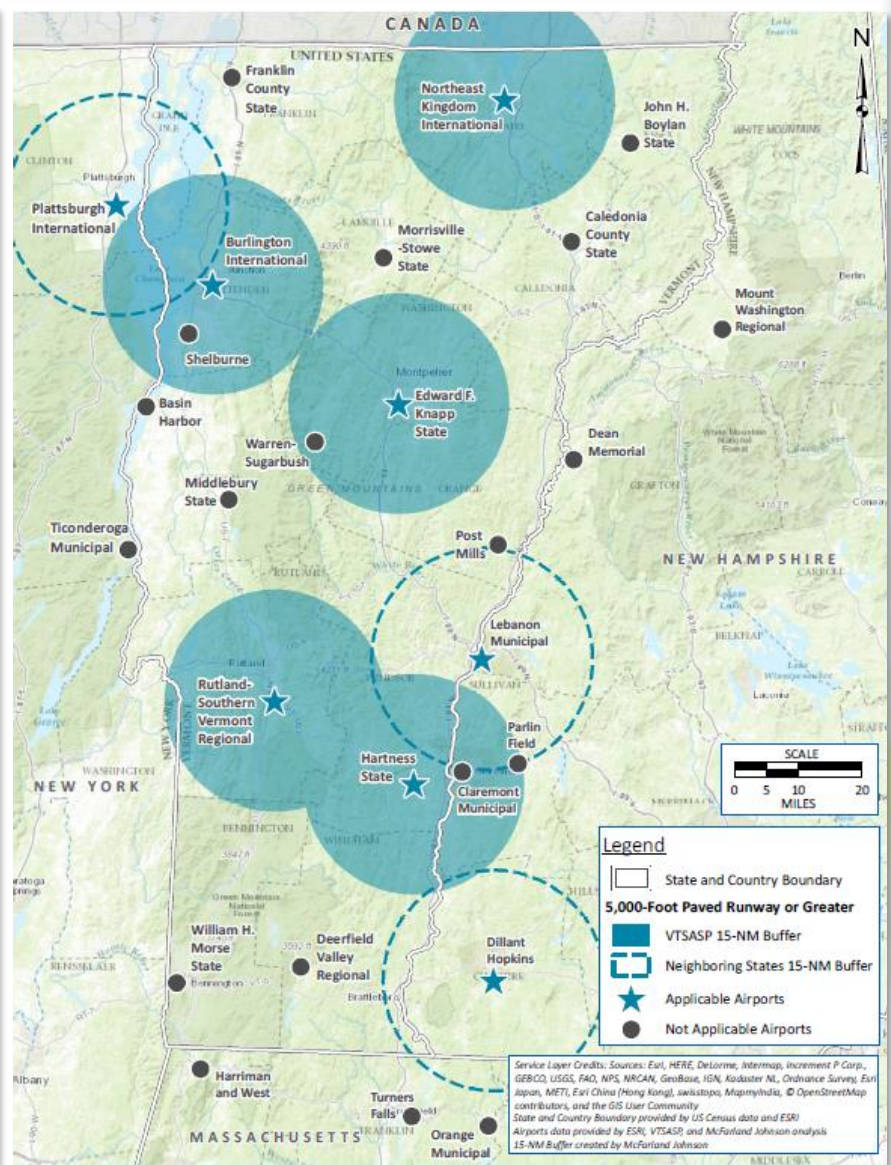
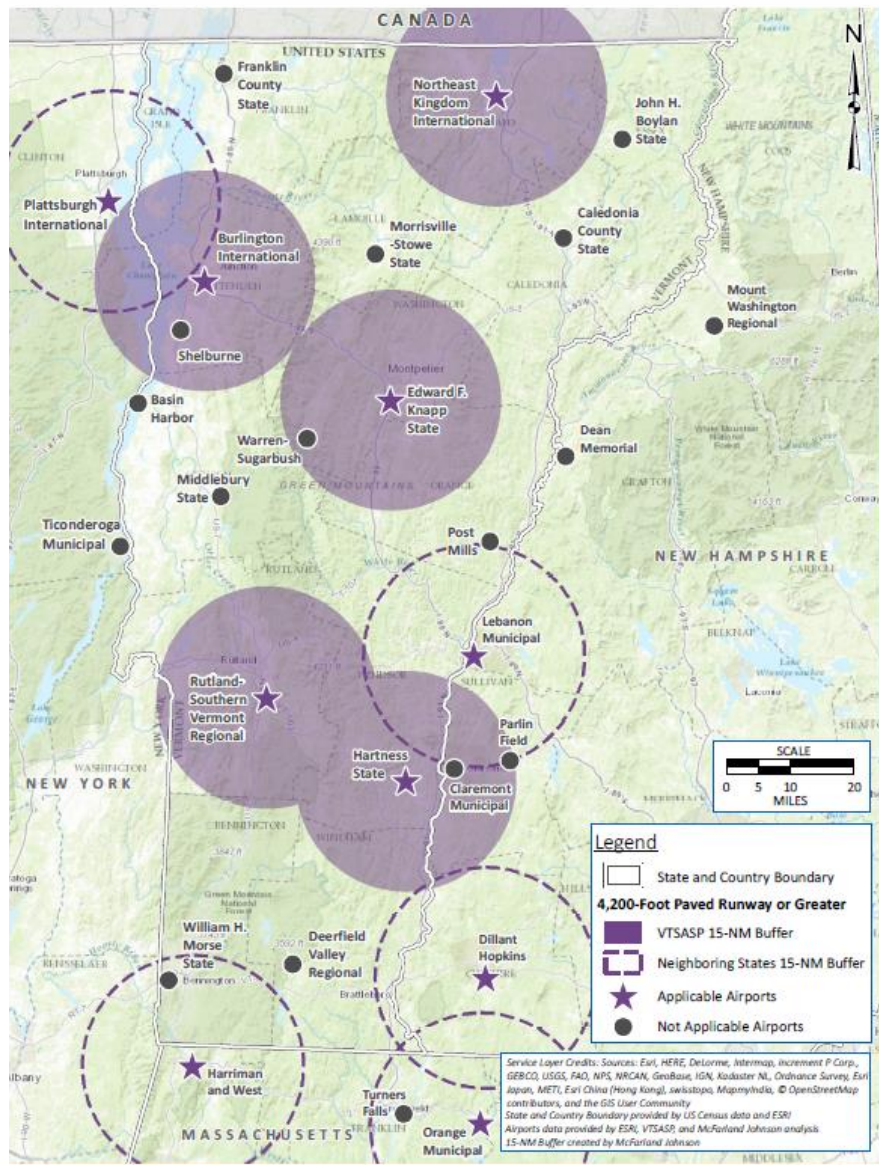


Current Performance - Reach

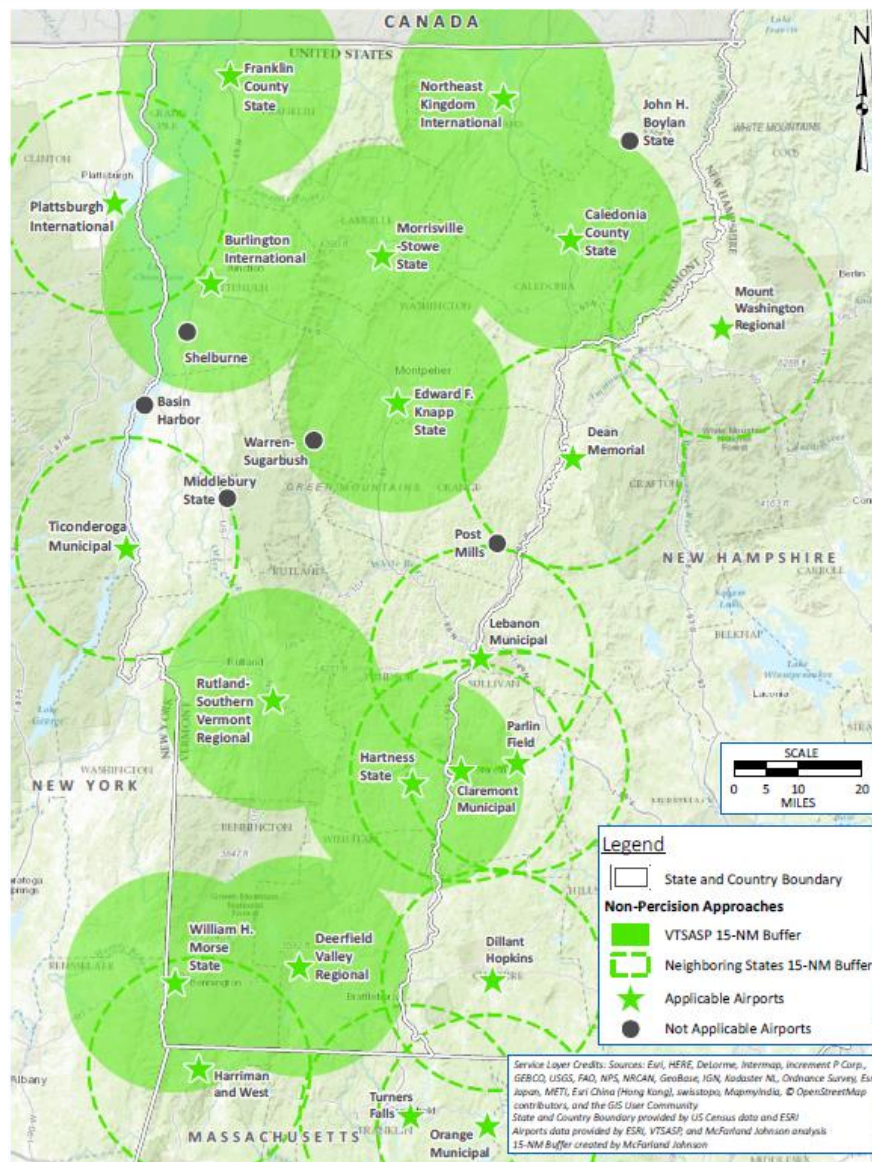
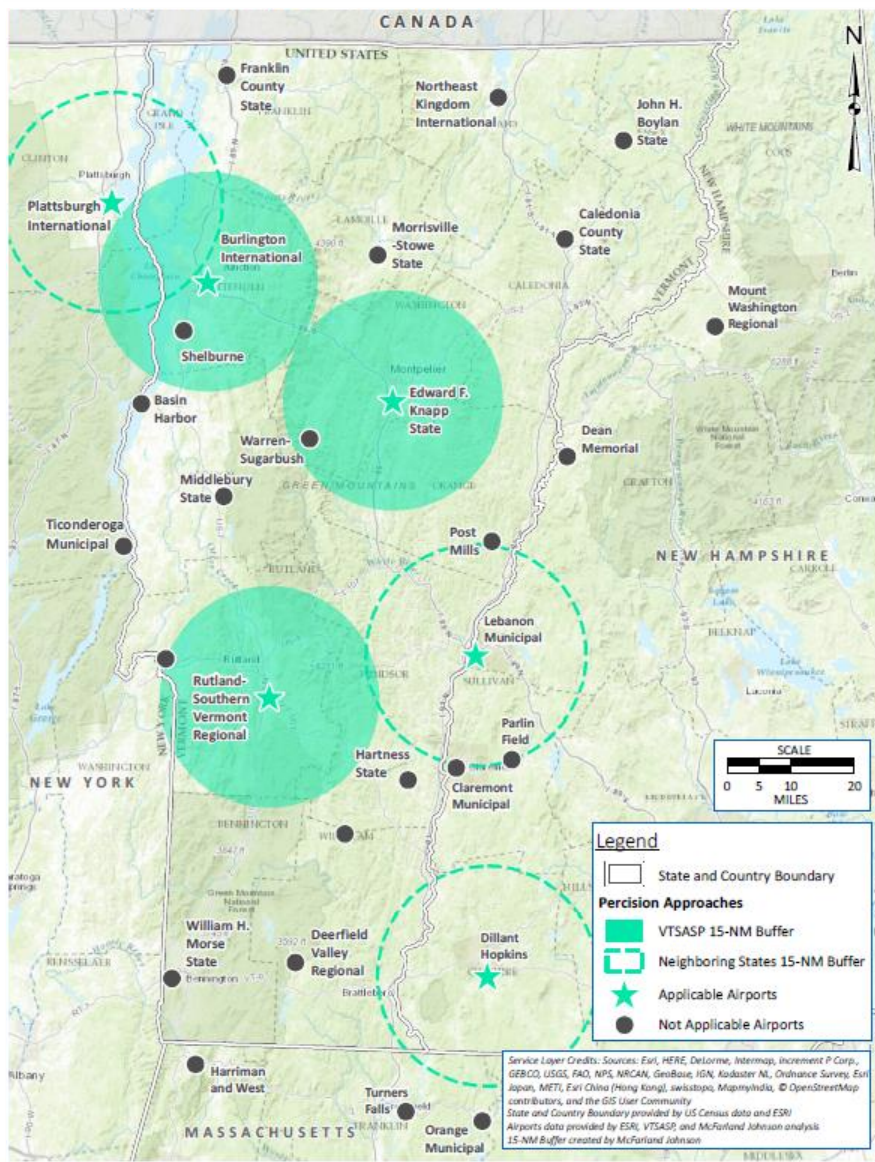
VASP Airports Coverage (30-Minute Drive Time)	Coverage (% Total)
Land Area Coverage	57%
Population Coverage	93%
Employment Center Coverage	88%



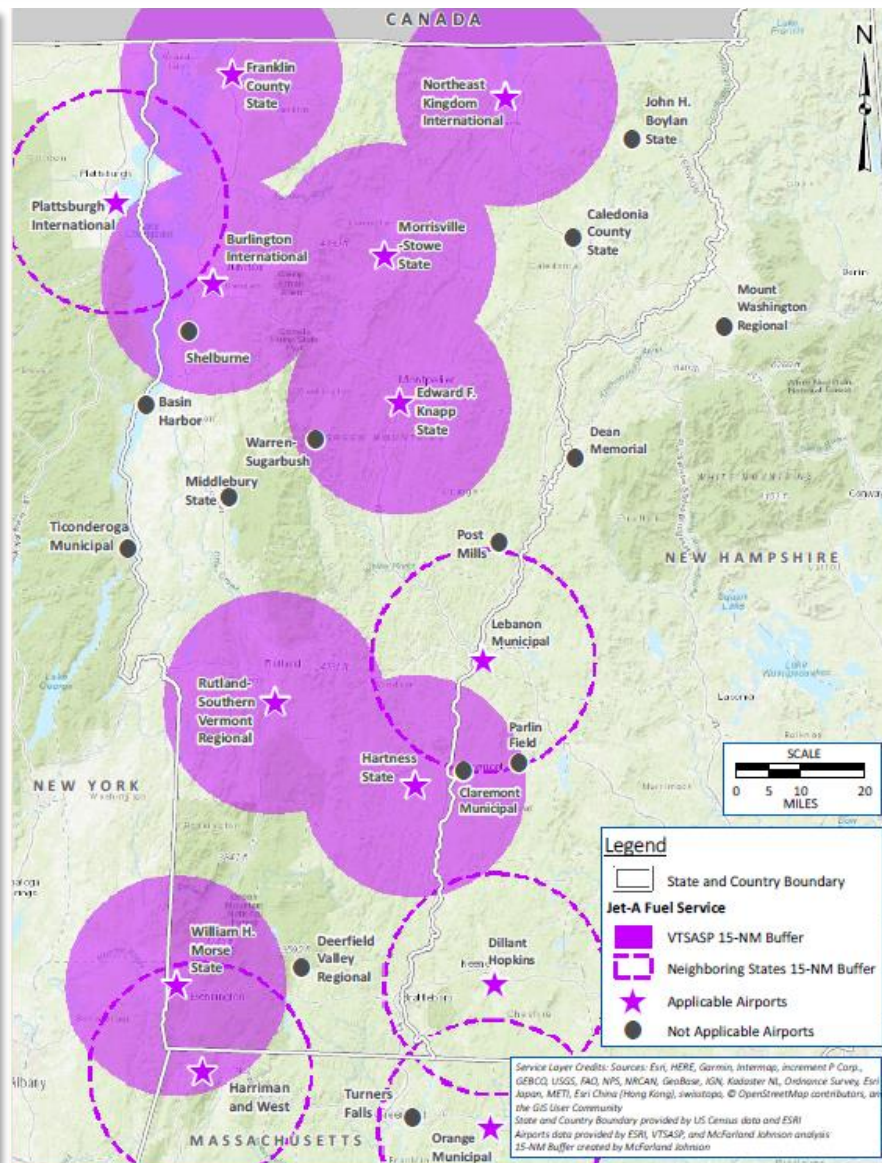
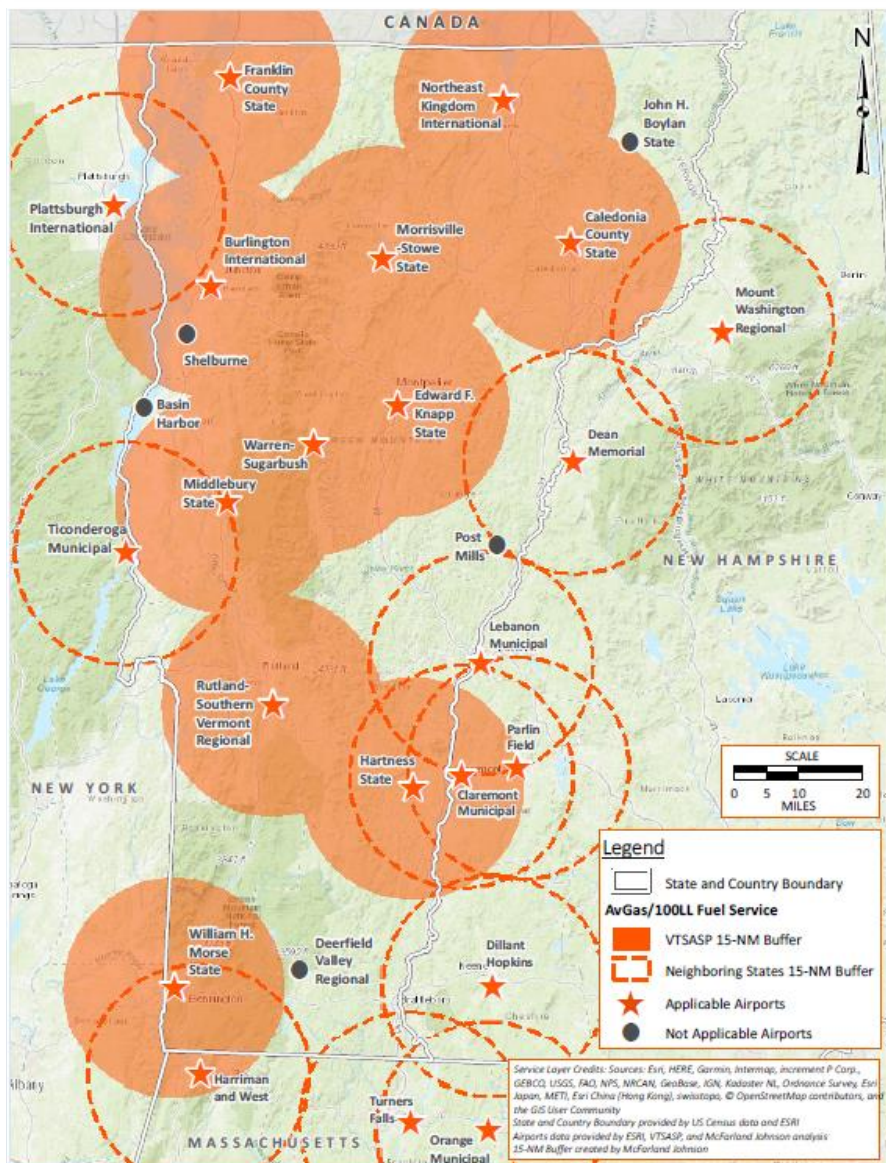
Current Performance - Runways



Current Performance - Approaches



Current Performance - Fuel



System Needs Prioritization



■ Priority 1

- Meeting Minimum Facility & Service Objectives

■ Priority 2

- Maximizing Existing Facilities and Infrastructure (Partial Credit)

■ Priority 3

- Facilities & Services Above/Beyond VASP
- Private Owned/Public Use Infrastructure
- Large/Comprehensive Projects

VASP – Priority 1



Airport	Projects to Improve Future Performance
Basin Harbor	<ul style="list-style-type: none"> • Basic Terminal Building/Shelter
Burlington International	<ul style="list-style-type: none"> • Meets Objectives
Caledonia County State	<ul style="list-style-type: none"> • Meets Objectives
Deerfield Valley Regional ^{1/}	<ul style="list-style-type: none"> • Full-Time Airport Manager On-Site (Seasonal OK)
Edward F. Knapp State	<ul style="list-style-type: none"> • Meets Objectives
Franklin County State	<ul style="list-style-type: none"> • Meets Objectives
Hartness State	<ul style="list-style-type: none"> • Meets Objectives
John H. Boylan State	<ul style="list-style-type: none"> • Basic Terminal Building/Shelter • Part-Time Airport Manager On-Site (Seasonal OK)
Middlebury State	<ul style="list-style-type: none"> • Non-Precision Approach Capability
Morrisville-Stowe State	<ul style="list-style-type: none"> • Runway Extension/Maximize Runway Length • Jet-A Fuel Service
Northeast Kingdom International	<ul style="list-style-type: none"> • Precision Approach Capability
Post Mills ^{1/}	<ul style="list-style-type: none"> • Basic Terminal Building/Shelter
Rutland-Southern Vermont Regional	<ul style="list-style-type: none"> • Meets Objectives
Shelburne ^{1/}	<ul style="list-style-type: none"> • Non-Precision Approach Capability
Warren-Sugarbush ^{1/}	<ul style="list-style-type: none"> • Non-Precision Approach Capability
William H. Morse State	<ul style="list-style-type: none"> • Runway Extension/Maximize Runway Length

^{1/} Privately Owned

VASP – Priority 2



Airport	Projects to Improve Future Performance	
Basin Harbor	<ul style="list-style-type: none"> Meets Objectives 	
Burlington International	<ul style="list-style-type: none"> Meets Objectives 	
Caledonia County State	<ul style="list-style-type: none"> Aircraft/Avionics Maintenance Svcs. On-Site Full-Time Airport Manager On-Site Full-Time Operations Staff On-Site 	<ul style="list-style-type: none"> 100LL and Jet-A Self Service Aviation Fuel Full Service FBO On-Site Full-Time
Deerfield Valley Regional ^{1/}	<ul style="list-style-type: none"> 100LL Self-Service Aviation Fuel on Site Single-Svc. SASO/Full-Svc. FBO on Site (Part-Time OK) 	<ul style="list-style-type: none"> Part-Time Operations Staff On-Site or Contracted GPS Instrument Approach Procedure
Edward F. Knapp State	<ul style="list-style-type: none"> 100LL and Jet-A Self Service Aviation Fuel on Site 	
Franklin County State	<ul style="list-style-type: none"> Full-Time Airport Manager On-Site Full-Time Operations Staff On-Site 100LL & Jet-A Self Svc. Aviation Fuel on Site 	<ul style="list-style-type: none"> Full Service FBO On-Site Full-Time Aircraft /Avionics Maintenance Svcs. On-Site Full-Time Airport Manager On-Site
Hartness State	<ul style="list-style-type: none"> Meets Objectives 	
John H. Boylan State	<ul style="list-style-type: none"> MoGas or 100LL On-Site 	
Middlebury State	<ul style="list-style-type: none"> GPS Instrument Approach Procedure 100LL Self-Service Aviation Fuel on Site Full-Time Airport Manager On-Site (Seasonal OK) 	<ul style="list-style-type: none"> Part-Time Operations Staff On-Site or Contracted Single-Svc. SASO/Full-Svc. FBO on Site (Part-Time OK) Lighted Windsock
Morrisville-Stowe State	<ul style="list-style-type: none"> Full-Time Operations Staff On-Site 100LL and Jet-A Self Service Aviation Fuel on Site 	<ul style="list-style-type: none"> Full Service FBO On-Site Full-Time Aircraft /Avionics Maintenance Services On-Site
Northeast Kingdom International	<ul style="list-style-type: none"> Meets Objectives 	
Post Mills ^{1/}	<ul style="list-style-type: none"> MoGas or 100LL On-Site 	
Rutland-Southern Vermont Regional	<ul style="list-style-type: none"> Airport Security Measures (SIDA, Badging, Staff etc.) Aircraft/Avionics Maintenance Svcs. on Site 	<ul style="list-style-type: none"> Rental Cars On-Site Concessions or Restaurant
Shelburne ^{1/}	<ul style="list-style-type: none"> Full-Time Airport Manager On-Site (Seasonal OK) Part-Time Operations Staff On-Site or Contracted 	<ul style="list-style-type: none"> Single-Svc. SASO/Full-Svc. FBO on Site (Part-Time OK) Lighted Windsock 100LL Self-Service Aviation Fuel on Site
Warren-Sugarbush ^{1/}	<ul style="list-style-type: none"> GPS Instrument Approach Procedure 100LL Self-Service Aviation Fuel on Site Full-Time Airport Manager On-Site (Seasonal OK) 	<ul style="list-style-type: none"> Part-Time Operations Staff On-Site or Contracted Single-Svc. SASO/Full-Svc. FBO on Site (Part-Time OK) Lighted Windsock
William H. Morse State	<ul style="list-style-type: none"> Full-Service FBO On-Site FT (Enhanced Service) Full-Time Operations Staff On-Site 	<ul style="list-style-type: none"> 100LL and Jet-A Self Service Aviation Fuel on Site Aircraft /Avionics Maintenance Services On-Site

^{1/} Privately Owned

VASP – Priority 3



Airport	Projects to Improve Future Performance
Basin Harbor	<ul style="list-style-type: none"> • MoGas or 100LL On-Site
Burlington International	<ul style="list-style-type: none"> • Meets Objectives
Caledonia County State	<ul style="list-style-type: none"> • Terminal Building with Pilot and Visitor Amenities • Runway and Taxiway Edge Lighting • Runway Extension/Maximize Runway Length
Deerfield Valley Regional ^{1/}	<ul style="list-style-type: none"> • Runway Extension/Maximize Runway Length
Edward F. Knapp State	<ul style="list-style-type: none"> • Meets Objectives
Franklin County State	<ul style="list-style-type: none"> • Terminal Building with Pilot and Visitor Amenities • Runway and Taxiway Edge Lighting • Runway Extension/Maximize Runway Length
Hartness State	<ul style="list-style-type: none"> • Meets Objectives
John H. Boylan State	<ul style="list-style-type: none"> • Meets Objectives
Middlebury State	<ul style="list-style-type: none"> • Runway Extension/Maximize Runway Length
Morrisville-Stowe State	<ul style="list-style-type: none"> • Own/Operate Snow Removal Equipment (Additional)
Northeast Kingdom International	<ul style="list-style-type: none"> • Meets Objectives
Post Mills ^{1/}	<ul style="list-style-type: none"> • Meets Objectives
Rutland-Southern Vermont Regional	<ul style="list-style-type: none"> • Intermodal Transportation Connections at/near Site • ARFF Capability • Precision Approach Capability • ATCT • Improvements to Network/Legacy Airline Service
Shelburne ^{1/}	<ul style="list-style-type: none"> • Runway Extension/Maximize Runway Length
Warren-Sugarbush ^{1/}	<ul style="list-style-type: none"> • Runway Extension/Maximize Runway Length
William H. Morse State	<ul style="list-style-type: none"> • Terminal Building with Pilot and Visitor Amenities • Runway and Taxiway Edge Lighting

^{1/} Privately Owned

Next Steps



2019 Policy Draft Themes



- Preserving Vulnerable Infrastructure
- Economic Development
- Financial Sustainability
- Project/Investment Prioritization
- Embracing Technological Developments
- Aviation Connectivity with Other Modes

Next Steps



- Economic Benefits Assessment Spring/Summer 2019
- Recommendations and Policy Spring 2019
- Public Meetings/Project Completion Summer 2019
- Public/User Engagement Opportunities:
 - VAAC Briefings (Quarterly)
 - E-mail/Written Comments (RLucas@MJinc.com)
 - Summary Public Meetings (Summer)

VTrans Staff

- Daniel Delabruere- Rail & Aviation Bureau Director
- Paul Libby- Senior Project Manager
- Costa Pappis– Policy & Planning Manager

Consultant Team

- Rick Lucas – Project Manager
- Scott LeCount - Lead Planner
- Subconsultants
 - Randal Wiedemann - Economic Impact Study
 - Michael Webber (Webber Air Cargo) – Air Cargo Analysis

Questions?



Project Contacts

Rick Lucas – Rlucas@mjinc.com (MJ)

Paul Libby Paul.Libby@Vermont.gov (Vtrans)